

An electron beam current integrator

S/120/62/000/002/002/047

E039/2420

collector of the secondary electrons (foil thickness 10μ , clearance between foils 2 mm). In use the foil assemblies are placed about 150 mm behind the target and arranged so that the beam passes through the centre of all the foils. The assembly was calibrated against a Faraday cylinder for a 35 Mev beam of electrons and the secondary emission coefficient K shown to be equal to (0.5 ± 0.01) secondary e^- /primary e^- . There are 2 figures and 2 tables. +

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR
(Physicotechnical Institute AS UkrSSR)

SUBMITTED: July 26, 1961

Card 2/2

GRISHAYEV, I.A. [Hryshayev, I.O.]; DEM'YANOV, A.V. [Dem'ianov, O.V.];
SIKORA, D.I.; SHRAMENKO, B.I.

Efficiency of a secondary emission monitor in the 15-70 Mev.
energy range. Ukr. fiz. zhur. 8 no.9:1029-1030 S '63.
(MIRA 17:8)

1. Fiziko-tekhnicheskiy institut AN UkrSSR, Khar'kov.

L 13748-65 AEDC(b)

ACCESSION NR: AP404745B

S/0120 /64/000/005/0048/0054

AUTHOR: Afanas'yev, N. G.; Vybot'skaya, A. V.; Gol'dshteyn, V. A.;
Dem'yanov, A. V.; Startsev, V. I. B

TITLE: Magnetic spectrometer for electrons with energy up to 100 Mev

SOURCE: Pribo^vry* i tekhnika eksperimenta, no. 5, 1964, 48-54

TOPIC TAGS: spectrometer, magnetic spectrometer, magnetic spectrometer
focusing

ABSTRACT: Design principles, construction, and experimental results obtained with a uniform-field double-focusing magnetic spectrometer are reported. By using circular borders, perfect horizontal focusing and satisfactory vertical focusing have been ensured; the measurement of nuclear-reaction products within 22-158° is possible; the magnet gap is 29 mm; the spectrometer input and output are equipped with magnetic shields. The design features of the spectrometer are

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ACCESSION NR: AP4047458

shown in Enclosure 1. The main windings are supplied by an 11-kw dynamo-electric amplifier. Resolution, for 2- and 4-mm-dia sources, is 0.2 and 0.4%, respectively; the capture angle in the median plane is 18° . Other design data is given. Calculation of horizontal aberrations is made up to the 4th order and vertical aberrations up to the 3rd order. Orig. art. has: 9 figures and 4 formulas.

ASSOCIATION: Fiziko-tekhnicheskii institut AN UkrSSR (Physico-Technical Institute, AN UkrSSR)

SUBMITTED: 12Nov63

ENCL: 01

SUB CODE: OP, NP

NO REF SOV: 004

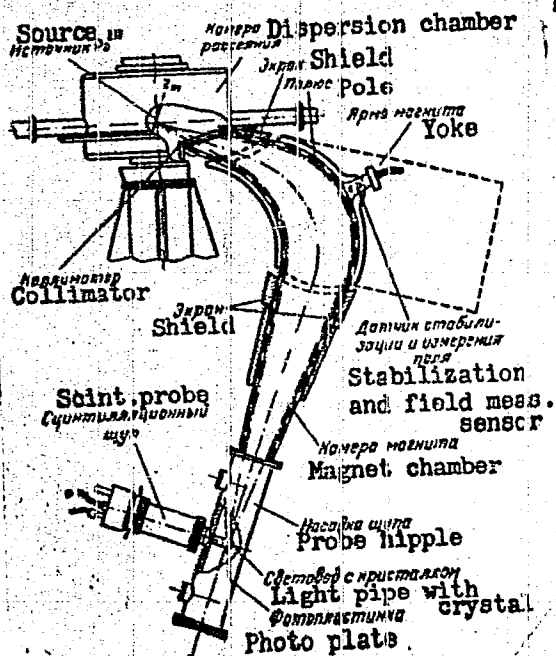
OTHER: 005

Card 2/3

L 13748-65
 ACCESSION NR: AP4047458

ENCLOSURE: 1

Magnetic spectrometer and
 a counter for checking
 the focusing



Card 3/3

ZHUKOVSKIY, B.D., kand. tekhn. nauk; ZIL'DERSHTEYN, L.I., kand. tekhn. nauk;
MIZERA, V.I., inzh.; PETRUNIN, Ye.P., inzh.; TAT'YUK, G.Z., inzh.;
Prinimali uchastiye: MATLAKHOV, L.I.; NECHIPOREIKO, M.I.; DUPLIY,
G.D.; GAPICH, V.I.; FATEYEVA, A.F.; DYN'KO, N.M.; LUGOVENKO, I.P.;
DEM'YANOV, B.M.; POSTIL, I.S.; BEZRODNYKH, I.Ya.

Investigating the possibility of manufacturing welded tube
blanks for cold forming. Proizv. trub no.11:67-72 '63.

(MIRA 17:11)

Dem'yanov, B.V.

Call Nr: AF 1108825

Transactions of the Third All-union Mathematical Congress* (Cont.) Moscow
June-July '56, Trudy '56, vol. 1, Sect. Rpts (Tom 1,) Izdatel'stvo Akad. Nauk SSSR,
Vinogradov, A. I. (Leningrad). New Additive Problems
with primes. 4

Dem'yanov, B. V. (Moscow). On Hypothesis Concerning the
Expression of Zero by Forms With p -adic coefficients. 4-5

There are 2 references, both USSR.

Kogoniya, P. G. (Tbilisi). On the Set of Condensation Points
of Markov's Number Set. 5

There are 2 references, 1 USSR and 1 German.

Kubilyus, I. P. (Vil'nyus). On Distribution Values of
Theoretical Number Functions. 5-6

Mention is made of Kolmogorov, A. N.

Levin, B. V. (Tashkent). On a Special Class of Differential
Operators Which is Connected With the Theory of Modular Functions
and the Theory of Numbers. 6

Card 3/80

L 16580-65 ENT(1)/ENT(m)/T/EMP(t)/EBC(b)-2/EMP(b) LJP(c)/ESD(df)/ESD(t)/
ESD(gs)/SSD/AFWL/ASD(a)-5 JD/GG/AT S/0070/64/009/006/0910/0915
ACCESSION NR: AP5000293

AUTHORS: Dem'yanov, E. A.; Kolesnikov, V. N.; Sleptsov, G. V.

TITLE: Investigation of chemical crystallization of germanium in
the open iodide process ²⁷

SOURCE: Kristallografiya, v. 9, no. 6, 1964, 910-915

TOPIC TAGS: germanium, crystallization, epitaxial growing, single
crystal, thin film ¹⁶

ABSTRACT: To study the epitaxial growths of germanium in the open
iodide process, using the reaction $2 \text{GeI}_2 (\text{gas}) \rightleftharpoons \text{Ge} (\text{solid}) + \text{GeI}_4$
(gas) + Q (calories) the authors investigated the crystallization
of germanium in accordance with this reaction in a vessel consti-
tuting a quartz tube 1 meter long and 18 mm inside diameter and in
a specially constructed oven with programmed heating. The carrier
was a laminar stream of purified hydrogen. Pure iodine was distilled

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ACCESSION NR: AP5000293

in the hydrogen stream at 70C. The germanium source was finely crushed germanium with specific resistivity ohm-cm. The substrates were single-crystal germanium plates (n type, resistivity 40 ohms-cm), approximately 200 microns thick and with area 0.3 cm². The films produced had equilibrium growth figures (cubic) on the surface, thus indicating that the films are epitaxial, single-crystal, and of high degree of structural perfection. The results show that these figures can be grown in the open iodide process over a wide temperature interval. In the temperature interval 300--400C, the epitaxy of germanium in the iodide process is the rule rather than the exception, with the growth of the film noticeably affected by the purity of the reaction surface of the substrate (no film was grown on contaminated areas). The chemical crystallization method creates growth conditions that are close to equilibrium and yields semiconductor layers with a high degree of structural perfection. In view of the small degrees of supersaturation, it is assumed that the growth of the films in this process is based on a dislocation mechanism. X-ray

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ACCESSION NR: AP5000293

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structural and metallographic tests were made, and also measurements of the microhardness of the resultant films. "The authors thank L. A. Zubritskiy and V. P. Kornienko for continuous help and attention, and also A. G. Klimenko for participating in the experiments during the initial stage of the work." Orig. art. has: 3 figures and 4 formulas.

ASSOCIATION: None

SUBMITTED: 07Feb64

ENCL: 00

SUB CODE: SS.

NR REF SOV: 007

OTHER: 005

Card 3/3

L 40097-66 EWP(m)/T/EWP(t)/ETI IJP(c) JD

ACC NR: AP6019664 (N) SOURCE CODE: UR/0073/66/032/006/0642/0645 1/2

AUTHOR: Kolesnikov, V. N.; Dem'yanov, E. A.; Sleptsov, G. V.; Korniyenko, V. P. C

ORG: Kharkov State University im. A. M. Gor'kiy (Khar'kovskiy gosudarstvennyy universitet)

TITLE: Study of the thermochemical etching of germanium single crystals with gaseous iodine 27 16

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 32, no. 6, 1966, 642-645

TOPIC TAGS: germanium single crystal, iodine, etched crystal, THERMOCHEMISTRY

ABSTRACT: The article considers the effect of the temperature and pressure of gaseous iodine on the reaction between the latter and single-crystal germanium, and also the mechanism of the thermochemical etching of surface (III) of germanium. It is shown that germanium tetraiodide is formed at 200-550°, and germanium diiodide at 300-800°. The region of maximum yield of diiodide and tetraiodide is ~400°. At T > 600°, the yield of diiodide increases with rising temperature. A mechanism including the successive stages of chemisorption of iodine, formation of the iodide, and desorption is proposed. A metallographic study of the surface after etching showed that true etch figures (flat and depressed triangles) are formed on surface (III) over a definite range of etching rates at 500-600° and iodine pressures of 2-4 mm in the iodine zone. Orig. art. has: 2 figures.

SUB CODE: 07/ SUBM DATE: 16Jul64/ ORIG REF: 003/ OTH REF: 008/ UDC: 546.289:548.372

Card 1/1

PASHKOV, Aleksandr Nikolayevich; KORSÁKOV, Vladimir Petrovich. Prinima-
li uchastiye: DEM'YANOV, F.M.; MALYUTIN, S.S.; BABKIN, V.I.,
inzh., retsenzent; KAPOTOV, A.P., red.; KRASAVINA, A.M., tekhn.
red.

[Manual for checkers of radio measurement devices] Poveriteliu
radioizmeritel'nykh priborov. Pod obshchei red. F.M.Den'ianova.
Moskva, Voenizdat, 1962. 453 p. (MIRA 15:8)
(Radio measurements--Handbooks, manuals, etc.)

Y
DEM'ZANOV, G. P.

Putevoditel' po Volgie. [Guide-book to Volga]. N.-Novgorod, 1889. 166 p.
"Materialy, sluzhivshie posobien": p. [2].
DLC: DK511.V65D

SO: Soviet Transportation and Communications, ABibliography, Library of Congress,
Department. Washington, 1952. Unclassified.

DEMYANOV, GRIGORIY STEPANOVICH

DECEASED

SEE ILC

MEDICINE

6(4)

SOV/107-59-3-15/52

AUTHOR: Dem'yanov, I., Chief of the Central Radio Club

TITLE: The Club of Radio Engineering Enthusiasts (Klub entuziastov radiotekhniki)

PERIODICAL: Radio, 1959, Nr 3, pp 15 - 17 (USSR)

ABSTRACT: The author tells of the activities of the Tsentral'nyy radioklub (Central Radio Club) pointing out that many devices developed by radio amateurs have found application in industrial installations and that All-Union Exhibitions are regularly held showing the creative work of radio amateurs. The Central Radio Club develops amateur equipment, prepares literature on electronics and organizes competitions among radio amateurs. On the occasion of the 100th anniversary of A.S. Popov's birthday, the Central Radio Club will issue a special diploma to Soviet and foreign radio amateurs who established communication with 100 amateur stations within the USSR during the period from

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SOV/107-59-3-15/52

The Club of Radio Engineering Enthusiasts

1 January to 31 December 1959.

ASSOCIATION: Tsentral'nyy radioklub (Central Radio Club)

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6(

05918
SOV/107-59-7-21/42

AUTHOR: Dem'yanov, I., President of Central Radio Club

TITLE: Diplomas Awarded by the Central Radio Club

PERIODICAL: Radio, 1959, Nr 7, pp 23 - 24 and p 2 of the cover
(USSR)

ABSTRACT: The author explains the requirements for obtaining diploma certificates W-100-U, R-150-S, R-6-K, R-15-R and R-100-O. The diploma certificates are shown on p 2 of the cover. These diplomas will be awarded also to foreign radio amateurs. For obtaining the R-15-R, two-way contacts with amateur stations located in 15 different republics of the USSR within 24 hours are required. These contacts may be established on any amateur frequency. The diploma certificate R-100-O is awarded in three classes for contacting amateur stations of 100 (I), 75 (II) and 50 (III) oblast's of the USSR within one calendar year.

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SOV/107-59-7-21/42

Diplomas Awarded by the Central Radio Club

The diploma certificate R-6-K (S-6-K) is awarded in four classes for two-way, CW or phone contacts with one amateur station in Europe, Africa, Asia, North America, South America, Oceania, the European and Asiatic territory of the USSR. The certificate R-150-C is awarded to amateurs who have established contacts with other amateurs in 150 different countries, including the 15 republics of the USSR. All contacts established after June 1956 are counted for the R-6-K and R-150-S certificates. The certificate W-100-U is awarded to amateurs who contacted 100 amateurs in the USSR from January 1, 1959 to December 31, 1959. This certificate is given in honor of A.S. Popov's 100th birthday anniversary. Amateurs Yu. Prozorovskiy (UA3AW), A. Flonskiy (UA3DM/UA90J), A. Baturin (UA4HI) and Ye. Filippov (UA6LF) were the first ones to obtain certificate R-100-O. The certificate R-150-S was given first to V. Goncharskiy

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SOV/107-59-7-21/42

Diplomas Awarded by the Central Radio Club

(UB5WF), V. Semenov (UA9DN) and N. Stromilov (UA3BN).
The diploma W-100-U was given to N. Stromilov,
I. Chudakov (UA6UF), V. Gorbulev (UA4CL) and O. Buchnev
(UA3QC). Applicants for these diploma certificates
must submit their QSL cards to the Central Radio Club
in Moscow.

ASSOCIATION: Tsentral'nyy radioklub (Central Radio Club)

Card 3/3

DEM'YANOV, I.

Diplomas of our friends. Radio no.6:17-18 Je '64.

(MIRA 17:10)

1. Nachal'nik Tsentral'nogo radiokluba SSSR.

DEM'YANOV, I.

Diplomas of Scandinavian and central European countries.
Radio no.9:15-16 S '64. (MIRA 17:12)

1. Nachal'nik TSentral'nogo radiokluba SSSR.

DEM'YANOV, I.

New success in the competitions. Radio no.10:7 0 '62.

1. Nachal'nik Tsentral'nogo radiokluba SSSR.

(MIRA 18:2)

DEM'YANOV, 1.

Preparations have decided the success. Radio no.12:10-11 D '64.
(MIRA 18:3)

DEMYANOV, I. I.

137-58-2-2864

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 95 (USSR)

AUTHOR: Dem'yanov, I. I.

TITLE: The Organization of the Trimming Operation at the Zlatoust Metallurgical Plant (Organizatsiya raboty ad'yustazha na Zlatoustovskom metallurgicheskom zavode)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii, 1956, Vol 10, pp 256-263

ABSTRACT: Performance characteristics of the trimming equipment are given, and the organization of the trimming operation is described. To trim hard steels and tool steels, use is made of electric-furnace corundum abrasives bonded in bakelite wheels (hardness ST1, grain 16, class 1-4). For tough chrome-nickel steel, carborundum disks are preferred. The recommended grinding-surface speed is 42-48 m/sec. The cutting torches (operating on acetylene gas) have been improved. Their length has been increased to 1700-1900 mm, and the tip and head have been welded together into a single rigid light-weight piece. Jigs and cutting torches have been devised for trimming high-alloy stainless steels with the aid of an aluminum-magnesium powder containing silica-

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137-58-2-2864

The Organization of the Trimming Operation at the Zlatoust (cont.)

calcium. Included in the article are the organizational characteristics of the trimming operation, a calculation of the quantity of metal involved, an account of work-planning procedures, metal-control measures, and output norms.

1. ~~Steel Trimming Operation~~

D.M.

Card 2/2

DEM'YANOV, I.K.; TAZIYEV, Zh.Sh.; KOROLEV, A.S.; LEBEDEV, B.N., prof.,
doktor; NOVIKOVA, Ye.I., assistant

Extraction of gold from rebellious carboniferous ore. Sbor. nauch.
trud. Kaz GMI no.19:14-22 '60. (MIRA 15:3)
(Gold ores) (Ore dressing)

DEM'YANOV, L.

23310 Press Dlya Vulkanizatsii Kamei. Avtomobil', 1949, No. 7, p. 13

SO: LETOPIS' NO. 31, 1949

DEM'YANOV, L. A.

"Investigation of the Cold Start Method for Automobile Carburetor Engines."
Sub 7 Jun 51, Moscow Automobile and Road Inst imeni V. M. Molotov

Dissertations presented for science and engineering degrees in
Moscow during 1951.

SC: Sum. No. 480, 9 May 55

Demyanov, L. A.

USSR/Engineering - Auto engines

Card 1/1 Pub. 128 - 9/31

Authors : Demyanov, L. A., Cand. Tech. Sc.

Title : ~~ABOUT THE RUNNING-IN OF CYLINDERS OF GENERALLY OVERHAULED ZIS-120 AND GAZ-51 AUTO ENGINES~~
About the running-in of cylinders of generally overhauled ZIS-120 and Gaz-51 auto engines

Periodical : Vest. mash. 35/5, 24-28, May 1955

Abstract : It was established on the basis of tests that the running-in of engine parts - cylinders, shaft journals, bushings - has a great effect on the service life of the engine. The change in surface friction quality and consequently the between repair service life of the engine depend upon the selection of the running-in processes. It is stated that the running-in process reduces the time required for the preparation of friction surfaces. It was found that after a running-in of 80 - 100 min. under forced conditions the engine parts are perfectly worked in. Three USSR references (1950-1953). Tables; graphs; drawing.

Institution :

Submitted :

DEM'YANDV, L.A.

19571" Change in Hardness of Friction Surface of Lubricating
Cylinders During Break-In. Izmerenie tverlosti poverkhi
mosti treniya i-olindrey dvigatel' v protsesse prirabotki.
(Russian.) L. A. Dem'yanov and B. A. Kolobovnikov. Vestnik
nauchnogo konstruirovaniya, v. 33, no. 12, Dec. 1955, p. 28-29.
Rate and depth of hardening; time, load, lubrication, and wear
factors. Relation between breaking-in rate and service life of
parts. Graphs: micrograph, diagram. 1 ref.

101
R-111

DEM'YANOV, I. A. kandidat tekhnicheskikh nauk.

Equipment for running-in tractor engines. Avt. i trakt. prom. no. 8:
35-37 Ag '56. (MIRA 9:10)

(Tractors--Engines)

SMIRNOVA, I.N.; BALEZIN, S.A.; GOLOVANOV, K.N.; Prinimali uchastiye:
DEM'YANOV, L.A.; TURKEVICH, A.I.; VEROB'YEV, P.I.; FEDOTOV, V.S.;
CHURILOV, Ye.M.

Effect of organic additives in fuel on the corrosion and wear
of internal combustion engines. Uch. zap. MGPI no.146:127-146
'60. (MIRA 15:4)
(Gas and oil engines--Corrosion) (Addition reactions)

DEM'YANOV, L.A., kand.tekhn.nauk; AKHTYAMOV, U.S.; AGEYEV, I.V.; PAKHOMOV, K.A.
SARAFANOV, S.K.

Performance of IAZ-204 engines fueled with light gasoline. Avt.prom.
no.2:23-27 P '61. (MIRA 14:3)
(Automobiles—Engines)(Gasoline)

S/081/62/000/004/070/087
B138/B110

11 9000
AUTHORS:

~~Dem'yanov, L. A.~~, Semenido, Ye. G., Vorob'yev, P. I.,
Shchegolev, N. V., Senichkin, M. A., Sharapov, V. I.

TITLE:

Tracer method of investigating the wear-resistance
properties of sulfurous oils

PERIODICAL:

Referativnyy zhurnal. Khimiya, no. 4, 1962, 483, abstract
4M184 (Sb. "Khimiya seraorgan. soyedineniy,
soderzhashchikh v neft'yakh i nefteproduktakh. v. 4",
M., Gostoptekhnizdat, 1961, 206-211)

TEXT: The anti-wear properties of thickened sulfurous oils from the
Novo-Ufimka NPZ and Baku oils have been investigated. The test bench
consisted of a 3M-123F (ZIL-123F) engine with full instrumentation and
radiometric apparatus for the determination of the radioactivity of the
oil. The greater part of both oils contained multi-functional additives
for the improvement of their operational qualities. The wear resistance
of the oils was assessed from the slope of the wear line to the X-axis
($\tan \alpha$), while a comparative assessment was made from the "relative

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Tracer method of investigating...

S/081/62/000/004/070/087
B138/B110

variation in wear tempo", which is the ratio of $\tan \alpha$ of a standard oil (industrial 50 + 3 % ЦИАТИМ-330 (TsIATIM-330)) and $\tan \alpha$ of the test specimen expressed in percentages. The high wear resistance of the oils was found to be determined by the S-concentration of the Novo-Ufimka oil base fraction. The thickened oils showed better wear resistance than ordinary oils with additives and the sulfurous ones produced by the Novo-Ufimka NPZ were somewhat better than those from Baku. [Abstracter's note: Complete translation.]

Card 2/2

DEM'YANOV, N. G.

Insecticides

Control of scale insects (*Sphaerolecanium unifasciatum*) and peach aphids in the orchard. Dost. sel'khoz. No. 3, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. Incl.

LEVIT, A.B.; GADALIN, Yu.I.; DEM'YANOV, M.G.

Use of polychlorpinene for airplane spraying of large forest areas against Ixodes persulcatus ticks in the Kuybyshev region in 1959-1960. Med.paraz.i paraz.bol. no.3:315-317 '61.

(MIRA 1489)

1. Iz Kuybyshevs'oy oblastnoy sanitarno-epidemiologicheskoy stantsii (glavnyy vrach N.A. Popova).

(TICKS)

(PINENE)

(KUYBYSHEV PROVINCE—AERONAUTICS IN PUBLIC HEALTH)

FISHMAN, G.M.; RAVICH-SHCHEBO, P.A.; DEM'YANOVA, N.I.

Reducing the spoilage of persimmon during railroad transportation.
Kons. i ov. prom. 18 no.8:32-33 Ag '63. (MIRA 16:8)

1. Batumskiy filial nauchno-issledovatel'skogo instituta pishchevoy
promyshlennosti.
(Persimmon--Transportation)

DEM'YANOV, N. I.

Dem'yanov, N. I., Ice observations on Drift Station "Severnnyy Polyus-4",
V. sb.: Materialy nablyudeniya nauchno-issled. dreyfuyushchikh st. "Sev. polyus-3"
i "Sev. polyus-4" 1954-55 g. T. 1 (Materials of the observations of scientific
research drift stations "Sev. Polyus-3 and Sev. Polyus-4" 1954-55, Vol 1), 1957,
Leningrad, "Morskoy Transport" (Sea Transport), 1957, p 399-432; (RZhGeofiz 6/58-4073)

DEM'YANOV, N. I.

Dem'yanov, N. I., Visual observations on the condition of the ice cover by drift station Severnyy Polyus-4, V. sb.: Materialy nablyudeniya nauchno-issled. dreyfuyushchey stantsii "Severnyy Polyus-3" i Sev. Polyus-4" 1954/55, T. 1 (Material of the observations of the scientific research drift stations Sev. Polyus-3 and Sev. Polyus 4, 1954/55, Vol 1), Leningrad, "Morsk. transport" (Sea transport), 1957, p. 433-337; (RZhGeofiz 6/58-4067)

DEM'YANOV, N.I.

Effect of pulsations of ocean currents on current meter readings.
Trubl.Arkt. no.6:23-27 '59. (MIRA 13:6)
(Ocean currents)

DEM'YANOV, N.I.

Oceanographic expedition to the Chukchi and East Siberian Seas in
1960. Probl. Arkt. i Antarkt. no.8:97-98 '61. (MIRA 15:3)
(Chukchi Sea--Oceanographic research)
(East Siberian Sea--Oceanographic research)

DEM'YANOV, N.I.; STEPANOV, S.I.

Comparing the work conditions of current recorders installed at
self-contained stations of various design. Trudy AANII 210:29-32
'61. (MIRA 14:11)

(Oceanographic instruments)

DEM'YANOV, N.I.; NIKITIN, M.M.

Deep currents in the Arctic Basin. Trudy AAN I 248:42-48 '63.
(MIRA 17:6)

NIKITIN, M.M.; DEM'YANOV, N.I.

Deep currents of the Arctic basin. Okeanologia 5 no.2:261-
263 '65. (MIRA 18:6)

L 27291-66 EWT(1) (N)

ACC NR: AP6014287

SOURCE CODE: UR/0213/66/006/002/0354/0359

AUTHOR: Dem'yanov, N. I.; Stepanov, S. I.

ORG: Arctic and Antarctic Scientific Research Institute, Leningrad (Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut)

TITLE: Comparison of the ocean-current data obtained from various types of current meters

SOURCE: Okeanologiya, v. 6, no. 2, 1966, 354-359

TOPIC TAGS: oceanographic equipment, ocean current, oceanographic ship, recording equipment, ocean current meter/²⁴BPV 2¹⁰ ocean current meter, ²⁶BPV 2r ocean current meter

ABSTRACT: Simultaneous current measurements, carried out with the Ekman-Merz ocean current meter and with the BPV-2 and BPV-2r recording flow meters have been compared. The instruments were lowered from vessels, and the BPV-2 and BPV-2r recording flow meters were installed on buoys near which the current observations were carried out from ships. Comparison of the data obtained showed that in all cases, the Ekman-Merz flow meter had greater velocity readings than the BPV-2 and BPV-2r recording flow meters. These differences in readings did not exceed 5 cm/sec. Current velocities, measured from ships with all the instruments appeared to be greater than those measured with the same instruments installed on anchored buoys. The BPV-2r meters showed higher velocities for both ship and buoy observations than

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UDC: 551.46.085(26)

L 27291-66

ACC NR: AP6014287

those shown on the BPV-2 flow meters installed on buoys. Differences in estimating current directions were comparatively small in most cases not exceeding $\pm 20^\circ$. Orig. art. has: 2 figures and 5 tables. [Based on authors' abstract.] [NT]

SUB CODE: 08/ SUBM DATE: 09Sep64/

Card 2/2

SAVEL'YEV, V.; DEM'YANOV, V.; MINTS, A.

Ion traps. Radio no.12:39-41 D '55. (MIRA 9:4)
(Television--Picture tubes)

I 59377-65 EPA/EWP(f)/EPF(n)-2/EPR/T-2/EPA(hb)-2 Pa-a-4/Ps-4 WH

ACCESSION NR: AP5017864

UR/0286/65/000/011/0114/0114
621.432.332

26
25
B

AUTHOR: Dem'yanov, V. A.

TITLE: A system for intensely cooling the air forced into the cylinders of internal combustion engines. Class 46, No. 171689

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 11, 1965, 114

TOPIC TAGS: expansion engine, turbine engine, turbine engine compressor, internal combustion engine

ABSTRACT: This Author's Certificate introduces a system for intensely cooling the air forced into the cylinders of internal combustion engines. The device contains a turbine driven charging compressor which operates on exhaust gases, a turbine expansion engine and a compressor for this engine. The power of the turbine expansion engine is increased by connecting the shaft of the expansion engine either directly or through a transmission speed reducer to the motor shaft.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy dizel'nyy institut (Central

Card 1/2

L 59377-65

ACCESSION NR: AP5017064

Scientific Research Diesel Institute)

SUBMITTED: 09Jan64

ENCL: 00

SUB CODE: PR

NO REF SOV: 000

OTHER: 000

Card 2/2 *dlp*

L 62658-65 EWT(m)/T-2/EWP(f)

ACCESSION NR: AP:019090

UR/0286/65/(X00)/012/0111/0111

AUTHOR: Dem'yanov, V. A.

TITLE: A system for deep chilling of air pressed into the cylinders of an internal combustion engine. Claims 46, No. 172158

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 12, 1965, 111

TOPIC TAGS: cooling, refrigeration system, air cooling, compressor, air compressor, internal combustion engine, supercharger

ABSTRACT: This Author Certificate presents a system for deep chilling of air pressed into the cylinders of an internal combustion engine (see Fig. 1 on the Enclosure). The system consists of a supercharging compressor motivated by a turbine operating on exhaust gases, a compressor of a turbo-gas-expansion machine, and a turbo-gas-expansion machine. To diminish the power imbalance, the shaft of the supercharging compressor is connected, either rigidly or through a drive reducer, to the shaft of the turbo-gas-expansion machine. Orig. art. has: 1 schematic drawing.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy dizel'nyy institut (Central Scientific Research Diesel Institute)

Cord 1/3

L 52658-65

ACCESSION NR: AP5019090

SUBMITTED: 09Jan64

ENCL: 01

SUB CODE: PH, IE

NO REF SOV: 000

OTHER: 000

Card 2/3

I. 62658-65

ACCESSION NR: AP5019090

ENCLOSURE: 01

0

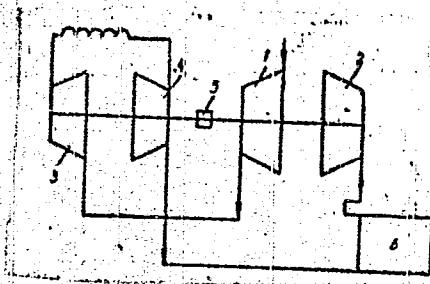


Fig. 1.

1- supercharger compressor; 2- turbine for driving the super-charger compressor; 3- turbo-gas-expansion machine compressor; 4- turbo-gas-expansion machine; 5- reducer; 6- piston engine

KC
Card 3/3

LEMYAND V B

Dem'yanov, V. B. On cubic forms in discretely normed fields. Doklady Akad. Nauk SSSR (N.S.) 74, 889-891 (1961) (Russian)

He has shown [J. Reine Angew. Math. 192, 126-148 (1923)] that every quadratic form in more than 4 variables over the field Q_p of p -adic numbers has a nontrivial zero in Q_p . Mordell has shown [J. London Math. Soc. 12, 127-129 (1937)] that for any $n > 0$ there exists a form over Q_p of degree n in n^2 variables which has no nontrivial zero in Q_p . There arose thus the conjecture that every form over Q_p of degree n in $n^2 + 1$ variables has a nontrivial zero in Q_p . In the present note the author verifies this conjecture for $n = 3$, $p \neq 3$. The first step is to prove the lemma that if a cubic form F over a field K of characteristic $\neq 3$ has no nontrivial zero in K , then F can be transformed by a reversible linear transformation over K into a form in which every x_i ($i < j$) has coefficient 0. Next the author considers any field K complete with respect to a discrete valuation and with residue class field P of characteristic $\neq 3$. Using the lemma he shows that if every cubic form over P in more than 4 variables has a nontrivial zero in P , then every cubic form over K in more than 31 variables has a nontrivial zero in K . By virtue of Chevalley's result [Abh. Math. Sem. Hamburg. Univ. 11, 73 (1935)] that every form over a finite field of degree n in more than n variables has a nontrivial zero in that field, this implies that if P is finite, then every cubic form over K in more than 9 variables has a nontrivial zero in K .

E. R. Kolchin (New York, N. Y.).

Source: Mathematical Reviews,

Vol 12 No. 5

51

DEM'YANOV, V.B.

HASSE, Helmut, 1898- ; DEM'YANOV, V.B. [translator]; SHAFAREVICH, I.R.,
redaktor

[Lectures on the theory of numbers. Translated from the German]
Lektsii po teorii chisel. Perevod s nemetskogo V.B.Dem'ianova; pod
red. I.R.Shafarevicha. Moskva, Izd. inostrannoi lit-ry, 1953.
527 p. (MLRA 8:2)
(Numbers, Theory of)

Dem'yanov, V. B. On representation of a zero of forms
of the form $\sum_{i=1}^n a_i x_i^n$. Dokl. Akad. Nauk SSSR
(N.S.) 105 (1955), 203-205. (Russian)

Let K be any field. Let A_n denote the order of the
multiplicative group of K , modulo n th powers. Let C_n be
the smallest integer such that any form $\sum a_i x_i^n$ in more
than C_n variables represents 0. Theorem: If -1 is a sum
of n th powers in K , then $C_n \leq A_n$. For $n=2$ this was a
conjecture of the reviewer [J. Math. Soc. Japan 5 (1953),
200-207; MR 15, 500], proved by Kneser as reported in
the review, and also proved by Tsuzuku [ibid. 6 (1954),
325-331; MR 16, 669]. Dem'yanov's proof is similar to

Kneser's. For the field of p -adic numbers the author notes
the value of A_n , observes that C_n may be smaller, and finds
the exact value of C_n if $p=2$ and n is a power of 2. An
application is given to the solution of congruences
 $\sum a_i x_i^n \equiv 0$ with integral coefficients. Full proofs are
included. I. Kaplansky (Chicago, Ill.).

Dem'yanov, V. B.

/ Dem'yanov, V. B. On representation of elements of a complete discrete normed field by forms over this field.

Dokl. Akad. Nauk SSSR (N.S.) 105 (1955), 401-404.

(Russian)

For characteristic $\neq 2$ it is well-known that a quadratic form which represents 0 also represents every element in the field. The author first notes that this result can be salvaged for characteristic 2 by assuming that the form can be annulled without annulling all the partial derivatives. This leads him to formulate an analogous theorem for forms of higher degree that can be proved for a field K complete in a discrete valuation. One assumes that s given forms in $x_1, \dots, x_n$ can be annulled so as to make the matrix $\partial f_i / \partial x_j$ have rank s ; the conclusion is that the forms can assume any s values $c_1, \dots, c_s$ in K . For a single form which is a linear combination of n th powers, with n not divisible by the characteristic of K , it is noted that the extra condition is superfluous. *I. Kaplansky.*

Math

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DEMYANOV, V.B.

SUBJECT USSR/MATHEMATICS/Algebra CARD 1/2 PG - 779
 AUTHOR DEMJANOV V.B.
 TITLE Pairs of quadratic forms over a complete discrete valued field
 with a finite residue class field.
 PERIODICAL Izvestija Akad.Nauk 20, 307-324 (1956)
 reviewed 5/1957

Let K be a complete field with a discrete valuation, I the ring of its integral elements, P its prime ideal, $\bar{K}$ residue class field mod p , π an element of p which is not divisible by p^2 .
 Theorem: If $\bar{K}$ is finite, $m \geq 8$ and $f(x_1, \dots, x_m)$ and $g(x_1, \dots, x_m)$ are arbitrary quadratic forms over K , then the system

$$\begin{cases} f(x_1, \dots, x_m) = 0 \\ g(x_1, \dots, x_m) = 0 \end{cases}$$

has a non-trivial solution over K . The proof bases on two lemmas:

1. Let $f = \sum_{i=1}^m \sum_{j=1}^m a_{ij} x_i x_j$ and $g = \sum_{i=1}^m \sum_{j=1}^m b_{ij} x_i x_j$, where $a_{ij}, b_{ij} \in I$ and $a_{11} \equiv \dots \equiv a_{mm} \equiv b_{11} \equiv \dots \equiv b_{mm} \equiv 0 \pmod{p}$. If the system $f = g = 0$ only has the trivial solution in K , then in I there exist λ and μ , at least one of which $\not\equiv 0 \pmod{p}$ such that all coefficients of the form $\lambda f + \mu g$ are divisible by p .

Izvestija Akad.Nauk 20, 307-324 (1956)

CARD 2/2

PG - 779

2. Let $f = \sum_{i=1}^m \sum_{j=1}^m a_{ij} x_i x_j$ and $g = \sum_{i=1}^m \sum_{j=1}^m b_{ij} x_i x_j$, where $a_{ij}, b_{ij} \in I$ and

$a_{11} \equiv \dots \equiv a_{mm} \equiv 0 \pmod{p}$, $a_{12} \equiv \dots \equiv a_{1m} \equiv 0 \pmod{p}$, but not all a_{ij}

$(i \neq j)$ are divisible by p . Furthermore let $b_{11} \equiv 0 \pmod{p}$, but not all

b_{ij} ($j=2, \dots, m$) be divisible by p . Then the system $f = g = 0$ has a non-trivial solution in K .

Some conclusions are given, e.g.: Let $\mathcal{K}$ be an algebraic number field, $\mathcal{O}$ an integral ideal of it, $f(x_1, \dots, x_m)$ and $g(x_1, \dots, x_m)$ be quadratic forms with coefficients of $\mathcal{K}$. If $m > 8$, then the system of congruences $f \equiv g \equiv 0 \pmod{\mathcal{O}}$ has a solution $x_i \equiv \xi_i \pmod{\mathcal{O}}$ ($i=1, \dots, m$) in $\mathcal{K}$, where $(\xi_1, \dots, \xi_m, \mathcal{O}) = 1$.

GAUSS, Karl Fridrikh [Gauss, Karl Friedrich]; [deceased]; DEM'YANOV, V.B. kand.fiz.-matem.nauk [translator]; VINOGRADOV, I.M., akademik, obshchiy red.; PETROVSKIY, I.G., akademik, red.; KUZNETSOV, I.V., kand.filos.nauk, red.; ANDREYEV, N.N., akademik, red.; KAZANSKIY, B.A., akademik, red.; SHCHERBAKOV, D.I., akademik, red.; YUDIN, P.F., akademik, red.; DELONE, B.N., red.; KOSHTOYANTS, Kh.S., red.; SAMARIN, A.M., red.; LEBEDEV, D.M., prof., red.; FIGUROVSKIY, N.A., prof., red.; RYVKIN, A.Z., red.izd-va; MAKOGONOVA, I.A., tekhn.red.

[Works pertaining to the theory of numbers] Trudy po teorii chisel. Obshchaya red. I.M.Vinogradova. Kommentarii B.N.Delone. Moskva, Izd-vo Akad.nauk SSSR, 1959. 978 p. (MIRA 13:2)

1. Chleny-korrespondenty AN SSSR (for Delone, Koshtoyants, Samarin).

(Numbers, Theory of)

DEM'YANOV, V.D. (Kislovodsk)

Reclamation of mountain slopes. Priroda 53 no.7:58-59 '64.
(MIRA 17:7)

DEM'YANOV, V.F. (Leningrad); KHOMENYUK, V.V. (Leningrad)

Solution of a linear problem on optimum control. Avtom. i telem.
24 no.9:1174-1177 S '63. (MIRA 16:9)
(Automatic control)

L 18594-63 EWT(d)/EPF(n)-2/BDS AFFTC/ASD/APGC/IJF(C)/SSD Pu-4/
Pg-4/PK-4/PL-4/PO-4/PQ-4 WW/BC
ACCESSION NR: AP3003250 S/0040/63/027/003/0554/0558

AUTHOR: Dem'yanov, V. F. (Leningrad)

TITLE: Construction of programming control in a linear system which is optimal in an integral sense

SOURCE: Prikladnaya matematika i mekhanika, v. 27, no. 3, 1963, 554-558

TOPIC TAGS: optimal control, trajectory, linear system, existence, uniqueness

ABSTRACT: The author considers $\dot{X}(t) = A(t)X(t) + \sum_{i=1}^r B_i(t)u_i(t) + F(t)$ $X(0) = X_0$

and obtains a successive approximation scheme for determining the optimal control u which in this case is defined to be the one minimizing $J(u) = \int_0^T X^*(t, u) N(t) X(t, u) dt$

where $A(t)$ is an n -dimensional square matrix, $F(t)$, $B_i(t)$, $i = 1, \dots, r$, are n -dimensional vectors. In particular, the author proves that the successive approximations he has developed monotonically decrease the value of $J(u)$ and that an optimal control exists, at least in the case where $N(t)$ is the identity. However, the optimal
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L 18594-63

ACCESSION NR: AP3003250

control need not be unique despite the fact that the trajectory $X(t)$ is. The author thanks V. I. Zubov for his valuable advice and comments. Orig. art. has: 12 formulas.

ASSOCIATION: none

SUBMITTED: 05Jan63

DATE ACQ: 23Jul63

ENCL: 00

SUB CODE: MM

NO REF SOV: 002

OTHER: 000

Card 2/2

DEM'YANOV, V.F. (Leningrad)

Minimization of convex flat functionals in linear systems with
convex flat constraints of the phase coordinates. Avtom. i
telem. 25 no.11:1528-1537 N '64 (MIRA 18:1)

L 15780-65 EWT(d) LJP(c)/ESD(dp)
 ACCESSION NR: AP4049006

S/0043/64/000/004/0005/0017

AUTHORS: Dem'yanov, V. F.; Rubinov, A. M.

TITLE: Minimization of a smooth convex functional on a convex set

SOURCE: Leningrad. Universitet. Vestnik. Seriya matematiki, mekhaniki i astronomii, no. 4, 1964, 5-17

TOPIC TAGS: convex function, Banach space, successive approximation, optimum control

ABSTRACT: Consider the Banach space X on which a convex functional f with gradient F is given. Let F have derivative F' ; for definitions, see M. M. Vaynberg (Variatsionnyye metody issledovaniya nelineynykh operatorov. M., GTTI, 1956). Let Ω be a convex, closed, bounded set; $\Omega \subset X$. The problem is to find $y \in \Omega$ such that

$$f(y) = \min_{x \in \Omega} f(x). \quad (1)$$

Theorem 1: In order for the convex differentiable functional f to attain a minimum on Ω at the point y , it is necessary and sufficient that this point be a solution of the equation

$$(\bar{x} - x, Fx) = 0. \quad (2)$$

An arbitrary point $x_1 \in \Omega$ is chosen as the first approximation. Suppose the

Cord 1/3

L 15780-65

ACCESSION NR: AP4049006

element x_n has been constructed. Then $\bar{x}_n$ is found, and the function $g_n(\alpha)$ is set up; it is defined for $\alpha \in [0,1]$ by

$$g_n(\alpha) = f(\bar{x}_n + \alpha(x_n - \bar{x}_n)) \quad (3)$$

$g_n(\alpha)$ is a convex function and attains a minimum on $[0,1]$ at a point denoted by α_n . Then suppose $x_{n+1} = \bar{x}_n + \alpha_n(x_n - \bar{x}_n)$. Thus a sequence is constructed

$$\begin{matrix} x_1, x_2, \dots, x_n, \dots \\ \bar{x}_1, \bar{x}_2, \dots, \bar{x}_n, \dots \end{matrix} \quad (4)$$

Theorem 2: Suppose the convex functional f is bounded from below on Ω and has a differentiable gradient F there, where F' is bounded on Ω . Suppose f attains a minimum on Ω at y . Then $f(x_n) \rightarrow f(y) = \min_{x \in \Omega} f(x)$. The authors construct succes-

sive approximations to avoid certain infinite procedures and prove that this also yields the desired minimum in the limit. They then specialize to the case of a linear set. The theory is applied to optimization problems in automatic control and problems in approximation theory and integer programming. Orig. art. has: 46 formulas.

ASSOCIATION: none

Card 2/3

L 15780-65

ACCESSION NR: AF4049006

SUBMITTED: 05Apr63

SUB CODE: MA

NO REF SOV: 005

0
ENCL: 00

OTHER: 000

Card 3/3

ACCESSION NR: AP4011314

8/0103/64/025/001/0003/0011

AUTHOR: Dem'yanov, V. F. (Leningrad)

TITLE: Synthesizing an optimum program in a linear system

SOURCE: Avtomatika i telemekhanika, v. 25, no. 1, 1964, 3-11

TOPIC TAGS: automatic control, optimized automatic control, time optimum automatic control, automatic control theory, synthesizing optimum control program

ABSTRACT: Many automatic-control problems, particularly those associated with synthesizing optimum programs, can be reduced to this mathematical formulation: a functional is given $I(u) = X^*(T, u)NX(T, u)$, where $X(T, u)$ is the value of the solution of a fundamental set of differential equations, N is the square symmetrical positively determined constant real matrix; asterisk means transposition; T is fixed. Selection of $u(t) \in U$ is required so that the functional

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ACCESSION NR: AP4011314

$I(u)$ takes on its minimum value. The method of successive approximations is suggested for solving the above time-optimum problem. Convergence of the $X_n(t)$ vector sequence is proven. "I wish to thank V. I. Zubov, V. A. Gerasimov, V. V. Khomenyuk, N. Ye. Kirin, and all participants of the VTs LGU seminar on optimum control." Orig. art. has: 90 formulas.

ASSOCIATION: none

SUBMITTED: 20Dec62

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: CG, IE

NO REF SOV: 001

OTHER: 001

Card 2/2

DEMYANOV, V.F.; RUBINOV, A.M.

Problem of the minimization of a smooth functional with convex
limitations. Dokl. AN SSSR 190 no.12:19-20, 1965.

(MIW 76:2)

Leningradskiy gosudarstvennyy universitet im. A.S. Zhdanova.
Submitted June 25, 1964.

L 42410-65 EWT(d) Pg-4/Ph-4 IJP(c)

ACCESSION NR: AP5006264

S/0040/65/029/001/0158/0161

AUTHOR: Lem'yanov, V. F. (Leningrad); Khydyakov, L. Yu. (Leningrad)

28
B

TITLE: Solution in integers of a problem in quadratic programming

SOURCE: Prikladnaya matematika i mekhanika, v. 29, no. 1, 1965, 158-161

TOPIC TAGS: nonlinear programming, operations research, mathematical method, optimum process, applied mathematics, matrix algebra, analytic geometry, vector analysis

ABSTRACT: The problem of whole-number linear programming has been treated by L. V. Kantorovich (Matematicheskiye metody organizatsii i planirovaniya proizvodstva, Izd. LGU, 1939) and by D. B. Yudin and Ye. G. Gol'shteyn (Zadachi i metody lineynogo programmirovaniya, Fizmatgiz, 1961). The present authors, considering the quadratic case, first examine the non-integral auxiliary problem (the "continuous" problem), and then show how to find an integral solution from a known solution of the non-integral solution. As an example, they reduce the problem of selecting the optimum order of external actions to a linear system. The general problem is posed as follows:

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L 42410-65

ACCESSION NR: AP5006264

Given the function

$$P(X) = X^* V X + X^* B + c \quad (1.1)$$

where

$X = (x^1, \dots, x^n)$, an n -dimensional vector
 V - real symmetric positive-definite square matrix of order n
 B - n -dimensional vector
 c - a real number
 $*$ - the operation of transposition

Also given n real numbers

$$\gamma_1, \dots, \gamma_n \quad (A)$$

from which one can form factorial- n ($n!$) different n -dimensional vectors, into each of which all the numbers (A) enter as coordinates. All of the points of the set of these vectors, designated by Ω , obviously lie in a plane which is perpendicular to the vector $(1, 1, \dots, 1)$ and which passes through the point $(a, a, \dots, a)$ where

$$a = (\gamma_1 + \dots + \gamma_n)/n$$

It is required to find a point Z in the set Ω

$$Z \in \Omega$$

such that

$$Z = \min_{X \in \Omega} P(X) \quad (1.2)$$

Card 2/3

L 12410-65

ACCESSION NR: AP5006264

Orig. art. has: 32 formulas.

ASSOCIATION: none

SUBMITTED: 24Feb64

ENCL: 00

SUB CODE: DP, MA

NO REF SOV: 004

OTHER: 000

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Card 3/3

L 2586-66 EWT(d)/EPF(n)-2/EWP(v)/EWP(k)/EWP(h)/EWP(l) IJP(c) WW/BC

ACCESSION NR: AP5019397

UR/0103/65/026/007/1153/1160
62-505.1

AUTHOR: Dem'yanov, V. F. (Leningrad)

TITLE: Solution of some extremal problems

SOURCE: Avtomatika i telemekhanika, v. 26, no. 7, 1965, 1153-1160

TOPIC TAGS: automatic control theory, optimal automatic control

ABSTRACT: Several optimal problems are considered. Given a restricted class of admissible controls U represented by piecewise-continuous, limited within $[0, T]$, r -variable, real vector functions, find the optimal control $u \in U$ which minimizes the functional $I(u) = f(X(T, u))$; this is an optimal-program-control problem encountered in nonlinear automatic-control systems. In the next problem, the optimal control $u \in U$ is found (3 variants) for a distributed-

parameter linear system $Q(x, t) = \int_0^t \sum_{i=1}^r K_i(x, t-\tau) u_i(\tau) d\tau \quad (0 \leq x \leq s, 0 \leq t \leq T), \quad (2.1)$

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L 2586-66

ACCESSION NR: AP5019397

where $K_i(x, t) = (k_{i1}(x, t), \dots, k_{in}(x, t))$ ($i = 1, \dots, r$) are n -variable vector functions with piecewise-continuous, real, restricted components. The last convex-programing problem finds a vector $Y = (y_1, \dots, y_n) \in \Omega$, such that

$F(Y) = \min_{X \in \Omega} F(X)$. Given is a convex smooth function of n variables:

$F(x_1, \dots, x_n) = F(X)$. Orig. art. has: 66 formulas.

ASSOCIATION: none

SUBMITTED: 22Feb64

ENCL: 00

SUB CODE: IE

NO REF SOV: 011

OTHER: 001

Card 2/2

15054-66 EWT(d)/T/EWP(1) ITP(c)

ACC NR: AP6002142

SOURCE CODE: UR/0280/65/000/006/0003/0012

AUTHOR: Dem'yanov, V. F. (Leningrad); Khudyakov, L. Yu. (Leningrad)

ORG: none

TITLE: One problem in integer convex programing

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 6, 1965, 3-12

TOPIC TAGS: programing, convex programing, integer programing

ABSTRACT: A convex smooth function of n variables defined within region R of an n -dimensional Euclidian space, $F(x_1, \dots, x_n) = F(X)$, is considered. A point $Y = (y^1, \dots, y^m) \in \Omega$, such that $F(Y) = \min_{X \in \Omega} F(X)$ is sought. Here, Ω means the entire set of vectors: $X = (X^1, \dots, X^m)$; $X^i \in \Omega_i$, $i = 1, \dots, m$. First, a corresponding non-integer (continuous) problem is studied, the method of successive approximations is suggested for its solution, and the way is shown by which the solution of the second problem can be utilized for solving the first. The efficiency of the above method depends on a number of particular factors which are described in the article. Orig. art. has: 75 formulas and 1 table.

SUB CODE: 09, 12 / SUBM DATE: 25Mar65 / ORIG REF: 003

Card 1/1

L 1955-66 EWT(d)/EPF(n)-2/EWP(1) IJP(c) WN/BC

ACCESSION NR: AP5019929

UR/0043/65/000/003/0026/0034

AUTHOR: Dem'yanov, V. F. ¹5

TITLE: On finding optimal controls in certain automatic control problems ²⁵B

SOURCE: Leningrad. Universitet. ⁵ Vestnik. Seriya matematiki, mekhaniki i astronomii, no. 3, 1965, 26-34

TOPIC TAGS: differential equation, integral equation, control theory, approximation method, numerical method ^{1, 5}

ABSTRACT: Non-linear systems with delay variables and non-linear systems of integral-differential equations arising in control problems are studied under constraints on the phase coordinates. Successive approximations are used to obtain optimal control solutions. Necessary conditions for optimal controls are adduced and numerical methods are offered to find controls which satisfy these conditions by minimizing the functionals involved. Orig. art. has: 57 formulas.

ASSOCIATION: none

SUBMITTED: 12Feb64

ENCL: 00

SUB CODE: MA

NO REF SOV: 006

OTHER: 001

Card 1/1 ⁰⁰

L 14652-66 EWT(d) IJP(c)
ACC NR: AP6004250

SOURCE CODE: UR/0378/65/000/006/0065/0074

AUTHOR: Dem'yanov, V. F.

ORG: none

TITLE: Minimizing functions on convex finite sets

SOURCE: Kibernetika, no. 6, 1965, 65-74

TOPIC TAGS: automatic control theory, set theory, computer programming, minimization

ABSTRACT: The author considers the problem of minimizing differentiable functions of many variables in a limited convex region of finite-dimensional Euclidian space. Various methods of successive approximations are proposed which are applicable for solving problems in integral programming. The proposed methods may be extended to the solution of problems in minimizing functionals on finite sets in Banach spaces. These methods may also be used for solving various problems in automatic control, e. g. for solution of problems in speed, problems with limitations on phase coordinates, etc. Orig. art. has: 6 figures, 24 formulas.

SUB CODE: 12,13/ SUBM DATE: 08Jun65/ ORIG REF: 004/ OTH REF: 001

Card 1/1

UDC: 519.8

L 43107-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l)		BC
ACC NR: AP6011355	SOURCE CODE: UR/0208/56/006/002/0218/0228	
AUTHOR: Dem'yanov, V. F. (Leningrad) 52 13		
ORG: none		
TITLE: On the solution of optimal problems in <u>nonlinear automatic control systems</u> 14		
SOURCE: Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 6, no. 2, 1966, 218-228		
TOPIC TAGS: optimal control, successive approximation, <i>automatic control system</i>		
ABSTRACT: The problem of finding optimal controls for objects the state of which may be described by a system of n nonlinear ordinary differential equations or by a system of differential equations having constant or variable delay is studied. A necessary condition which the optimal control must satisfy is introduced. This condition for the case of a system of ordinary differential equations is the linearization of Pontryagin's maximum principle. Four theorems are stated and proved, developing the necessary and sufficient conditions for the control function to minimize the given functional. Orig. art. has: 70 formulas.		
SUB CODE: 12/ <i>09/</i>	SUBM DATE: 09Dec64/	ORIG REF: 004/ OTH REF: 001
UDC: 518:51:62.50		
Card 1/1 MLP		

L 02434-67 EWT(d) IJP(c)

ACC NR: AP6027319

SOURCE CODE: UR/0043/66/000/002/0021/0028

AUTHOR: Dem'yanov, V. F.

ORG: none

TITLE: On the ¹⁶minimization of maximum deviation

SOURCE: Leningrad. Universitet. Vestnik. Seriya matematiki, mekhaniki i astronomii,
no. 2, 1966, 21-28

TOPIC TAGS: optimal control, successive approximation, *VECTOR FUNCTION*,
FUNCTIONAL EQUATION

ABSTRACT: For the space $L_2^r(0, T)$ of r -dimensional real-valued vector functions let there be given a convex, bounded, weakly closed set U . Let there also be given a functional $R(t, u)$ bounded from below in U and a vector function G such that

$$R(t, u) = R(t, u_0) + \int_0^T G^*(t, \tau, u_0)(u(\tau) - u_0(\tau)) d\tau + \omega(t, u - u_0),$$

If

$$\|G(t') - G(t)\| = \sqrt{\int_0^T [G(t', \tau, u) - G(t, \tau, u)]^2 d\tau} \rightarrow 0$$

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UDC: 519.3 : 51 : 62-50

L 02434-67

ACC NR: AP6027319

and given other assumptions and given a functional

$$J(u) = \max_{t \in [0, T]} R(t, u).$$

it is required to find a control $u_0 \in U$ such that

$$J(u_0) = \min_{u \in U} J(u) = \min_{u \in U} [\max_{t \in [0, T]} R(t, u)].$$

The necessary condition for the existence of a minimum of functional $J(u)$ is established in a basic theorem, which is proved, and the stationary controls are found by the method of successive approximations. Orig. art. has: 78 formulas.

SUB CODE: 12/

SUBM DATE: 03Nov64/

ORIG REF: 002

Card 2/2 *gd*

ACC NR: AP6024374

SOURCE CODE: UR/0280/66/000/002/049/0155

AUTHOR: Dem'yanov, V. F.; Myshkov, S. K. (Leningrad)

ORG: none

TITLE: On the solution of certain optimal problems in nonlinear automatic control systems

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 2, 1966, 149-155

TOPIC TAGS: nonlinear automatic control system, optimal control, successive approximation, functional equation

ABSTRACT: The authors state, in a formulation slightly different from that of Pontryagin's .. "maximum principle" (Pontryagin, L. S., et al. Matematicheskaya teoriya optimal'nykh protsessov. Fizmatgiz, 1961), the necessary condition that must be satisfied by optimal control in a nonlinear automatic control system, for such problems as finding a control $v(t) \in U$ such that

$$I(v) = \min_{u \in U} I(u) \quad (1)$$

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ACC NR: AP6024374

and finding $v \in U$ such that

$$I(v) = \min_{u \in U} I(u) \quad (2)$$

where U is a class of controls, v is the optimal control. A theorem pertaining to the necessary optimality condition is formulated and proved: Theorem: So that the functional $I(u)$, specified with respect to U and having its gradient within U , may reach its minimum for the control $v \in U$, it is necessary, in the event of convexity of the functional $I(u)$, and sufficient that

$$\min_{u \in U} \int_0^T G_v^*(\tau) (u(\tau) - v(\tau)) d\tau = 0. \quad (3)$$

where $G_v^*(\tau)$ is the gradient of the functional $I(u)$, calculated at the point $u = v$. A method of successive approximations is proposed for finding the equation satisfying the necessary optimality condition. The applicability of this method illustrated for the case of the control of the flight speed of an aircraft by adjusting the thrust of its engine. Orig. art. has: 2 figures, 43 formulas.

SUB CODE: 12, ⁰¹09/09/ SUBM DATE: 20Aug64/ ORIG REF: 007

Cord 2/2

L 17788-66 EWT(d) IJP(c)
ACC NR: AP6004081

SOURCE CODE: UR/0020/66/166/002/0275/0277

AUTHOR: Dem'yanov, V. F.

ORG: Leningrad State University im. A. A. Zhdanov (Leningradskiy gosudarstvennyy universitet)

TITLE: Necessary condition for extremum in control problems with aftereffect

SOURCE: AN SSSR. Doklady, v. 166, no. 2, 1966, 275-277

TOPIC TAGS: optimal control, differential equation, variational calculus

ABSTRACT: The author treats the problem of minimizing

$$I(u) = \int_0^T g(x(t, u), x(t - h_1(t), u), u(t), t) dt, \quad (1)$$

where

$$dx(t)/dt = \dot{x}(t) = f(x(t), x(t - h_1(t)), u(t), t); \quad (2)$$

$$x(0) = x_0(t) \text{ for } t \in [-h_1(0), 0] \quad (3)$$

and $\nu(t) = t - h_1(t)$ is strictly increasing continuously differentiable and real.

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UDC: 519.25:62-501 2

L 17788-66

ACC NR: AP6004081

He gives necessary (and sufficient in the case of convex $I(u)$) conditions for solution of the posed problem. This paper was presented by Academician L. S. Pontryagin on 14 May 1965. Orig. art. has: 13 formulas.

SUB CODE: 12/ SUBM DATE: 25Feb65/ ORIG REF: 003

Card 2/2 vmb

DEBYANOV, V. I..

The Technique of Resetting and Immobilization of Forearm Bone Fractures.

OYENNO-MEDITSINSKIY ZHURNAL (MILITARY MEDICAL JOURNAL), No 12, 1954. P. 59

DEM'YANOV, V.M.

DEM'YANOV, V.M., kandidat meditsinskikh nauk (Leningrad)

Oblique cuneiform subtrochanteric osteotomy of the femur. Ortop.
travn. i protez. no.2:70-71 Mr-Ap '55. (MLRA 8:10)
(HIP, surgery
osteotomy, subrochanteric, oblique, cuneiform)

DEM'YANOV, V.M., kandidat meditsinskikh nauk

~~Results of supracondylar osteotomy of the hip in paralytic flexor~~
contractures of the knee joint. Ortop., travm. i protazh. no.6:26-30
N-D '55. (MLRA 9:12)

1. Iz kafedry ortopedii (nach - prof. I.L.Krupko) Voenno-meditsinskoy
ordena Lenina akademii im. S.M.Kirova

(LEG, musc.

flexor tendon contracture of knee, surg., supracondylar
osteotomy of hip)

(HIP, surg.

supracondylar osteotomy, in paralytic flexor contractures of
knee joint)

DEM'YANOV, V.M., kandidat meditsinskikh nauk

Determination of the abduction angle of the leg in subtrochanteric osteotomy of the femur. Ortop., travm. i protez. 17 no.4:49-51
Jl-Ag '56. (MIRA 9:12)

1. Iz kafedry ortopedii (nach. - prof. I.L.Krupko) Voenno-meditsinskoy ordena Lenina akademii im. S.M.Kirova.

(HIP, surg.

osteotomy, subtrochanteric, determ. of angle in postop. position of leg)

GARIBDZHANYAN, G.A., professor, (kv. 36, Leningrad bul'var Profsoyuzov,
d. 11) ~~DEB'YANOV, V.M.~~ kandidat meditsinskikh nauk.

Penicillin and surgery in the prevention of infections in
compound fractures: experimental research [with summary in English,
p.157-158] Vest. khir. 77 no.2:31-41 F '56 (MLRA 9:6)

1. Iz kafedry ortopedii (nach. prof. I.L. Krupko) Voenno-
meditsinskoy ordena Lenina akademii imeni. S.M. Kirova.

(FRACTURES, ther.

penicillin & surg. in open fract.)

(PENICILLIN, ther. use
open fract.)

DEM'YANOV, V.M., kand.med.nauk

Some features of the course of infected bone fractures in ionizing radiation injuries; experimental study. Ortop., travm. protez. 19 no.1:9-13 Ja-F '58. (MIRA 11:4)

1. Iz kafedry ortopedii i travmatologii (nach. - prof. I.L.Krupko) Voenno-meditsinskoy ordena Lenina akademii im. S.M.Kirova.

(RADIATIONS, inj. eff.

eff. on healing of fract. with infect. in rabbits (Rus))

(FRACTURES, exper.

eff. of penetrating radiations on healing of fract. with infect. in rabbits (Rus))

DEM'YANOV, V.M., kand.med.nauk

Epicondular osteotomy of the femur in old flexural contractures
and angular ankylosis of the knee joint. V.M. Dem'ianov. Ortop.
travm. i protez 19 no.2:76-77 Mr-Apr '58 (MIRA 11:5)

1. Iz kliniki ortopedii i travmatologii (nach.- prof. I.L. Krupko)
Voyenno-meditsinskoy akademii im. S.M. Kirova.
(FEMUR--SURGERY)

DEM'YANOV, V.M.

Apparatus for repositioning fractures in the treatment of
humeral fractures. Ortop., travm. i protez. 20 no.5:47-49
My '59. (MIRA 12:9)

1. Iz kliniki ortopedii i travmatologii (nach. - prof. I.L.
Krupko) Voenno-meditsinskoy ordena Lenina akademii im. S.M.
Kirova.

(SHOULDER, fract.
appar. for repositioning (Rus))

DEM'YANOV, V.M., dotsent

Intraosseous fixation of a 3-flanged nail in trans- and intertrochanteric fractures of the hip. Ortop.travm.i protez. 21 no.4: 57-59 Ap '60. (MIRA 13:9)

1. Iz kafedry ortopedii i travmatologii (nachal'nik - prof. I.L. Krupko) Voenno-meditsinskoy ordena Lenina akademii im. S.M.Kirova. (HIP--FRACTURES) (INTERNAL FIXATION OF FRACTURES)

DEM'YANOV, V.M., dotsent; KOTEL'NIKOV, L.M., kand.med.nauk

Characteristics of the course and treatment of gunshot fractures
of the hip in penetrating radiation injuries; experimental study.
Ortop., travm.i protez. no.4:35-42 '62. (MIRA 15:5)

1. Iz Voenno-meditsinskoy ordena Lenina akademii im. S.M. Kirova
(nach. - prof. P.P. Goncharov).
(RADIATION SICKNESS) (HIP JOINT--WOUNDS AND INJURIES)
(GUNSHOT WOUNDS)

VORONTSOV, A.V., dotsent; DEM'YANOV, V.M., dotsent

Treatment of fractures of the femur; review of foreign
literature. Ortop., travm. i protez. 24 no.3:77-84 Mr '63.
(MIRA 17:2)

1. Adres avtorov: Leningrad, K-9, Botkinskaya ul., d.13,
Klinika travmatologii i ortopedii Voenno-meditsinskoy
ordena Lenina akademii imeni Kirova.

DEM'YANOV, V.M., dotsent (Leningrad K-9, prospekt Karla Marksa, d.3, kv.1)

Efficient positioning of fragments and of the three-bladed nail in the surgical treatment of femoral neck fractures. Ortop., travm. i protez. 25 no.6:58-59 Je '64. (MIRA 18:3)

1. Iz kafedry travmatologii i ortopedii (nachal'nik - prof. I.I. Krupko) Voenno-meditsinskoy ordena Lenina akademii imeni Kirova.

DEM'YANOV, V.M., dotsent (Leningrad, prospekt Karla Marksa, 3, kv. 1)

Conservative and surgical treatment of fractures of the trochanteric section of the femur. Vest. khir. 92 no.11:53-59 Ja '64. (MIRA 17:11)

1. Iz kafedry travmatologii o ortopedii (nachal'nik - prof. I.L. Krupko)
Voyenno-meditsinskoy ordena Lenina akademii imeni Kirova.